# BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

## IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/067,424 | 02/07/2002 | Jeng Ping Lu | 7447.0021-01 | 8498 |

22852 7590 02/27/2003

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
1300 I STREET, NW
WASHINGTON, DC 20006

| EXAMINER |
|---|
| BROCK II, PAUL E |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2815 | |

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/067,424 | LU ET AL. | |
| | Examiner | Art Unit | |
| | Paul E Brock II | 2815 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *7-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 – 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 7 and 11 recite the limitation "the collection electrodes" in the eleventh and ninth line of the claims respectively. There is insufficient antecedent basis for this limitation in the claim. For purposes of this office action "the collection electrodes" will be considered --collection electrodes--.

4. Claim 14 recites the limitation "the second" in first line of the claim. There is insufficient antecedent basis for this limitation in the claim. For purposes of this office action "the second" will be considered --the second passivation layer--.

5. In claim 15, the phrase "wherein the wherein the" in the first line of the claim, makes no sense. For purposes of this office action "wherein the wherein the" will be considered --wherein the--.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Chan et al. (USPAT 5627094, Chan) and Possin et al. (USPAT 5777355, Possin).

With regard to claim 7, the AAPA discloses in figure 2 a method for making a high fill factor image array (40). The AAPA discloses in figure 2 providing a plurality of source-drain metal contacts (44). The AAPA discloses in figure 2 depositing a first passivation layer (56). The AAPA discloses in figure 2 opening a plurality of via holes through the first passivation layer. The AAPA does not disclose a second passivation layer. Chan discloses in figure 2a depositing a second passivation layer (22) that suppresses lateral leakage current. Chan discloses in figure 2b opening a plurality of via holes through the first and second passivation layers. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the second passivation layer deposition and opening steps of Chan in the method of the AAPA in order to protect the first passivation layer against contamination from future process steps. The AAPA discloses in figure 2 depositing a layer of conductive material. The AAPA discloses in figure 2 depositing a first doped a-Si layer (48). The AAPA discloses in figure 2

patterning to form the collection electrodes (46). The AAPA discloses in figure 2 depositing a continuous layer of I a-Si (50). The AAPA discloses in figure 2 depositing a continuous second layer of doped a-Si (52). The AAPA discloses in figure 2 depositing an upper conductive layer (54). It is not clear if the AAPA and Chan teach patterning the upper conductive layer. Possin teaches in figures 1 and 2; and in the abstract depositing and patterning an upper conductive layer (28). It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the patterning step of Possin in the method of the AAPA and Chan in order to differentiate the device into a plurality of devices, thus creating an array, which results in cost savings over having to make a plurality of devices separately.

With regard to claim 11, the AAPA discloses in figure 2 a high fill factor image array (40) forming process. The AAPA discloses in figure 2 providing a plurality of source-drain metal contacts (44). The AAPA discloses in figure 2 depositing a first passivation layer (56). The AAPA discloses in figure 2 opening a plurality of via holes through the first passivation layer. The AAPA does not disclose a second passivation layer. Chan discloses in figure 2a depositing a second passivation layer (22) over a first passivation layer (20) that suppresses lateral leakage current. Chan discloses in figure 2b opening a plurality of via holes through the first and second passivation layers. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the second passivation layer deposition and opening steps of Chan in the method of the AAPA in order to protect the first passivation layer against contamination from future process steps. The AAPA discloses in figure 2 depositing a layer of conductive material. The AAPA discloses in figure 2 depositing a first doped a-Si layer (48). The AAPA discloses in figure 2 patterning to form the collection electrodes (46). The AAPA

discloses in figure 2 depositing a continuous layer of I a-Si (50). The AAPA discloses in figure 2 depositing a continuous second layer of doped a-Si (52). The AAPA discloses in figure 2 depositing an upper conductive layer (54). It is not clear if the AAPA and Chan teach patterning the upper conductive layer. Possin teaches in figures 1 and 2; and in the abstract depositing and patterning an upper conductive layer (28). It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the patterning step of Possin in the method of the AAPA and Chan in order to differentiate the device into a plurality of devices, thus creating an array, which results in cost savings over having to make a plurality of devices separately.

With regard to claims 8 and 12, the AAPA discloses in figure 2 wherein the first passivation layer comprises silicon oxynitride.

With regard to claims 9 and 13, Chan discloses in column 7, lines 60 – 67 wherein the second passivation layer is an oxide.

With regard to claims 10 and 14, Chan discloses in column 8, lines 1 – 14 wherein the second passivation layer has a thickness of about 1000 Å.

With regard to claim 15, Chan discloses in figure 2a wherein the thickness of the second passivation layer is less than the thickness of the first passivation layer.

## *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pan, Shimoto et al., and Morita all disclose dual layered dielectric structures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul E Brock II whose telephone number is (703)308-6236. The examiner can normally be reached on 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703)308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Paul E Brock II
February 21, 2003

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800